Reminder to Physicians to Complete Deficient Medical Charts: A Randomized Study

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Timely completion of patient medical charts is not only necessary for reimbursement, but is also required by the Joint Commission on Accreditation of Health Organizations (JCAHO).[1] One of the hospitals affiliated with our medical center was experiencing an increasing number of deficient medical charts. Since a large number of our physicians used the clinical information system (CIS)[2] to look up patient information, we decided to use the CIS to remind physicians to complete their deficient charts.

The reminder was the first screen that the physician saw when they logged onto the CIS and contained the current number of deficiencies for that physician. The number of deficiencies was updated approximately weekly based on a manual count performed by Medical Records. To account for error in the manual count and frequent logins, the reminder was only shown if the number of deficiencies was at least 3, and was shown at most once in a 12-hour period.

To measure the effectiveness of the reminder, a randomized study was performed. Physicians who had 3 or more deficiencies during any manual count while the study was being conducted were eligible for the study. Eligible physicians were randomized to intervention (receive a reminder at most once every 12 hours) or control (receive no reminder) group. When a new list of deficiencies was obtained, newly eligible physicians were randomized and previously randomized physicians retained their status (intervention or control). Thus intervention physicians whose deficiencies fell below 3 did not receive any reminder during that week. We tracked the number of reminders for each physician.

The study was conducted from December 4, 1995 to February 22, 1996. The number of deficiencies was obtained 9 times during this period. At the beginning, there were 351 physicians in the intervention group and 347 physicians in the control group. At the end, there were 544 physicians in the intervention group and 558 physicians in the control group.

The unit of analysis was a single time period for a physician. For time period t and physician i, $diff_{it}$ was the difference in deficiencies between time periods t and $t+1$, $prev_{it}$ was the number of deficiencies and $msgs_{it}$ was the number of reminders shown. Only those time periods where *prev* was at least 3 were included in the analysis. There were 6265 such time periods (3011 intervention and 3254 control). The sum of *diff* (total reduction in deficiencies) was 4377 (3646 during time periods in which at least one message was shown and 731 during time periods in which no message was shown). Various regression models were fit using *diff* as the response and *prev* and *msgs* as the predictors. The best fit was:

$$diff_{it} = a_t + .311 \cdot prev_{it} + (.034 + .027 \cdot prev_{it}) \cdot \sqrt{msgs_{it}} \quad [1]$$

where a_t was the intercept for time period t. Both coefficients of the last term in Eq. 1 which represented the effect of the intervention were statistically significant. Using the last term, the intervention accounted for a reduction of 1723 (39.4%) deficiencies. The intervention was considered to be successful and the reminder is now being shown to all physicians with at least 3 deficiencies.

This study shows that a simple reminder containing the number of deficient charts is an effective means to get physicians to complete their deficient charts. More importantly, this study also demonstrates the role of a CIS in effectively implementing hospital administrative policies.

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References

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